

## CLAIMS

We claim:

1. A method in a computing system for naming groups of users of a subject Web site, comprising:

retrieving information identifying, for each of a plurality of groups, users that are members of the group;

for each group, analyzing properties of the members of the group to identify properties that distinguish users that are members of the group from users that are not members of the group, the analyzed properties relating to interactions with the subject Web site undertaken by users;

for at least one selected group:

displaying the properties identified as distinguishing members of the selected group from users that are not members of the selected group;

receiving user input specifying a name for the selected group; and

persistently storing the specified name in a manner that associates the specified name with the selected group, enabling the specified name to be displayed in conjunction with the selected group at a future time.

2. The method of claim 1, further comprising, for each selected group, displaying with each property identified for the selected group an icon representing the property.

3. The method of claim 1 wherein one or more properties are identified that reflect whether the users viewed a particular Web page.

4. The method of claim 1 wherein one or more properties are identified that reflect whether the users purchased a particular item.

5. The method of claim 1 wherein one or more properties are identified  
1 that reflect whether the users viewed a Web page among a group of Web pages relating to a  
2 particular product category.

6. The method of claim 1 wherein one or more properties are identified  
1 that reflect whether the users purchased an item in a particular product category.

7. A method in a computing system for analyzing each of a plurality of  
1 groups of items, comprising:  
3 retrieving information identifying, for each of a plurality of groups, items that  
4 are members of the group; and  
5 for each group, analyzing attributes of the items of the group to identify  
6 attributes that distinguish items that are members of the group from items that are not  
7 members of the group.

8. The method of claim 7, further comprising, for each group, generating a  
1 characterization of the group that incorporates the attributes identified for the group.

9. The method of claim 7, further comprising, for at least one selected  
1 group, displaying indications of the identified attributes in conjunction with an indication of  
2 the identified group.

10. The method of claim 7, further comprising, for each selected group,  
1 displaying with each attribute identified for the selected group an icon representing the  
2 attribute.

11. The method of claim 7, further comprising, for a distinguished group  
1 among the selected groups:  
3 receiving user input specifying a name for the distinguished group; and

4 persistently storing the specified name in a manner that associates the specified  
5 name with the distinguished group, enabling the specified name to be displayed in  
6 conjunction with the distinguished group at a future time.

12. The method of claim 7 wherein the analyzed attributes of the items are  
1 binary attributes having one of two possible values.

13. The method of claim 12, further comprising converting values of a  
1 multivalued attribute having one of more than two possible values to binary values of an  
2 analyzed binary attribute.

14. The method of claim 12, further comprising converting values of a  
1 continuous attribute having any of a range of numerical values to binary values of an  
2 analyzed binary attribute.

15. The method of claim 7 wherein the analyzed attributes of the items are  
1 multivalued attributes having one of more than two possible values.

16. The method of claim 7 wherein the analyzed attributes of the items are  
1 continuous attributes having any of a range of numerical values.

17. The method of claim 7 wherein the analysis is conducted in accordance  
1 with the first-principle method.

18. The method of claim 7 wherein the analysis is conducted using  
1 contingency matrices.

19. The method of claim 7 wherein the analysis is conducted in accordance  
1 with the chi-square approach.

20. The method of claim 7 wherein the analysis is conducted using Fisher's  
1 Exact Test.

21. The method of claim 7 wherein the analysis is conducted using factor  
1 analysis.

22. The method of claim 7 wherein the analysis is conducted using  
1 uncertainty measures.

23. The method of claim 7 wherein the analysis is conducted using  
1 Shannon's entropy measure.

24. The method of claim 7 wherein the analysis is conducted using mutual  
1 information measures.

25. The method of claim 7 wherein the analysis is conducted using a  
2 mathematical measure that indicates the degree of independence of an attribute from the  
3 membership of a particular segment group.

26. A computer-readable medium whose contents cause a computing system  
1 to analyze each of a plurality of groups of items by:

3 retrieving information identifying, for each of a plurality of groups, items that  
4 are members of the group; and

5 for each group, analyzing attributes of the items of the group to identify  
6 attributes that distinguish items that are members of the group from items that are not  
7 members of the group.

27. The computer-readable medium of claim 26 wherein the contents of the  
1 computer-readable medium further cause the computing system to, for each group, generate a  
2 characterization of the group that incorporates the attributes identified for the group.

28. The computer-readable medium of claim 26 wherein the contents of the  
1 computer-readable medium further cause the computing system to, for at least one selected

3 group, display indications of the identified attributes in conjunction with an indication of the  
4 identified group.

29. A method in a computing system for characterizing a selected group of  
1 items relative to one or more other groups of items, comprising:  
3 displaying information identifying the selected group; and  
4 in conjunction with the displayed information identifying the selected group,  
5 displaying one or more icons, each icon indicating a characteristic of members of the  
6 selected group that differentiates typical members of the selected group from typical  
7 members of the other groups.

30. The method of claim 29 wherein a plurality of icons are displayed, and  
1 wherein the plurality of icons is displayed in an order corresponding to the extent to which  
2 the characteristic indicated by each differentiates typical members of the selected group from  
3 typical members of the other groups.

31. The method of claim 29, further comprising displaying, in conjunction  
1 with each displayed icon, an indication of the extent to which the characteristic indicated by  
2 each differentiates typical members of the selected group from typical members of the other  
3 groups.

32. The method of claim 29, further comprising displaying, in conjunction  
1 with each displayed icon, a shape whose length indicates the extent to which the  
2 characteristic indicated by the displayed icon differentiates typical members of the selected  
3 group from typical members of the other groups.

33. The method of claim 29, further comprising displaying, in conjunction  
1 with each displayed icon, an indication of the extent to which the members of the selected  
2 group has the characteristic indicated by the icon.

1           34. The method of claim 29, further comprising displaying, in conjunction  
2 with each displayed icon, the percentage of the members of the selected group has the  
3 characteristic indicated by the icon.

1           35. The method of claim 29 wherein each item in the selected group is a  
2 user, and wherein a distinguished icon among the displayed icons indicates a characteristic  
3 reflecting either performance by users or failure of users to perform a selected action with  
4 respect to products in a selected product category, the method further comprising displaying,  
5 in conjunction with each displayed icon, one or more product indications, the displayed  
6 products indications indicating the products in the selected product category with respect to  
7 which the largest numbers of the users of the selected group either performed the selected  
8 action or failed to perform the selected action.

1           36. The method of claim 35 wherein the displayed product indications are  
2 displayed in an order corresponding to the number of users of the selected group either  
3 performed the selected action or failed to perform the selected action.

1           37. The method of claim 35 wherein a Web site includes a Web page for  
2 each product in the selected product category, and wherein the selected action is viewing the  
3 Web page for a product in the selected product category.

1           38. The method of claim 35 wherein a Web site includes a Web page in a  
2 selected Web page category, and wherein the selected action is viewing the Web page in the  
3 selected Web page category.

1           39. The method of claim 35 the selected action is purchasing a product in  
2 the selected product category.

1           40. The method of claim 35 wherein a Web site includes a Web page for  
2 each product in the selected product category, and wherein each displayed product indication  
3 includes a link to the Web page for the product indicated by the product indication.

41. The method of claim 29 wherein the characteristic indicated by a  
1 distinguished one of the displayed icons is possession of a distinguished attribute by at least  
2 a portion of the members of the selected group.

42. The method of claim 29 wherein the characteristic indicated by a  
1 distinguished one of the displayed icons is non-possession of a distinguished attribute by at  
2 least a portion of the members of the selected group.

43. The method of claim 29 wherein the displayed icons characterize a  
1 selected group of users of a Web site.

44. The method of claim 29 wherein one of the displayed icons conveys the  
1 likeness of a shopping basket.

45. The method of claim 29 wherein the displayed icons are brand logo  
2 icons that indicate actions related to one or more brands of products.

46. The method of claim 29 wherein one of the displayed icons conveys the  
1 likeness of a shopping basket overlaid by a circle-slash symbol indicating negation.

47. The method of claim 29 wherein one of the displayed icons indicates a  
1 high number of item purchases.

48. The method of claim 29 wherein one of the displayed icons indicates a  
1 low number of item purchases.

49. The method of claim 29 wherein one of the displayed icons conveys the  
1 likeness of a coupon.

50. The method of claim 29 wherein one of the displayed icons conveys the  
1 likeness of a coupon overlaid by a circle-slash symbol indicating negation.

51. The method of claim 29 wherein one of the displayed icons indicates a  
1 high level of coupon use.

52. The method of claim 29 wherein one of the displayed icons indicates a  
1 low level of coupon use.

53. The method of claim 29 wherein one of the displayed icons conveys the  
1 likeness of a dollar sign.

54. The method of claim 29 wherein one of the displayed icons conveys the  
1 likeness of a dollar sign overlaid by a circle-slash symbol indicating negation.

55. The method of claim 29 wherein one of the displayed icons indicates a  
1 high level of spending.

56. The method of claim 29 wherein one of the displayed icons indicates a  
1 low level of spending.

57. The method of claim 29, further comprising displaying a control usable  
1 by a user to specify a name for the selected group.

58. The method of claim 29 wherein the selected group and the other groups  
1 are mutually exclusive, in that no item belongs to more than one group.

59. A computing system for characterizing a selected group of items relative  
1 to one or more other groups of items, comprising:  
3 a display device; and  
4 a display generation subsystem that causes to be displayed together on the  
5 display device:  
6 information identifying the selected group, and



7 one or more icons, each icon indicating a characteristic of members of  
8 the selected group that differentiates typical members of the selected group from typical  
9 members of the other groups.

60. The computing system of claim 59 wherein the display generation  
1 subsystem causes a plurality of icons to be displayed, in an order corresponding to the extent  
2 to which the characteristic indicated by each differentiates typical members of the selected  
3 group from typical members of the other groups.

61. The computing system of claim 59 wherein the display generation  
1 subsystem causes to be displayed, in conjunction with each displayed icon, an indication of  
2 the extent to which the characteristic indicated by each differentiates typical members of the  
3 selected group from typical members of the other groups.

62. The computing system of claim 59 wherein the display generation  
1 subsystem causes to be displayed, in conjunction with each displayed icon, a shape whose  
2 length indicates the extent to which the characteristic indicated by the displayed icon  
3 differentiates typical members of the selected group from typical members of the other  
4 groups.

63. The computing system of claim 59 wherein the display generation  
1 subsystem causes to be displayed, in conjunction with each displayed icon, the percentage of  
2 the members of the selected group has the characteristic indicated by the icon.

64. One or more computer memories collectively containing a data structure  
1 identifying possible characterizations of groups of items, comprising a plurality of  
2 indications each indicating one of a plurality of possible characterizations of groups of items,  
3 such that the contents of the data structure may be used to select possible characterization  
4 that characterize a group of items.

65. The computer memories of claim 64 wherein the data structure further  
1 comprises, for each indicated possible characterization, information identifying an icon  
2 associated with the possible characterization,  
4 such that the contents of the data structure may be used to display icons associated with the  
5 selected possible characterizations.

66. The computer memories of claim 64 wherein the data structure further  
1 comprises, for each indicated possible characterization, information indicating a  
2 differentiation threshold, the differentiation threshold indicating the extent to which the  
3 subject of the possible characterization must differentiate a group of items from items in  
4 other groups in order for the possible characterization to apply to the group of items,  
6 such that possible characterizations may be selected based upon satisfaction of their  
7 differentiation thresholds.

67. One or more generated data signals collectively conveying a data  
1 structure indicating a characterization of a group of items, comprising information  
2 identifying one or more characteristics that distinguish typical items in the group of items  
3 from typical items outside the group of items,  
5 such that the contents of the data structure may be used to display characteristics of the group  
6 of items that characterize the group of items.

68. The generated data signals of claim 67 wherein the data structure is  
1 displayable document.

69. The generated data signals of claim 67 wherein the data structure is an  
1 HTML document.

70. The generated data signals of claim 67 wherein the data structure is an  
2 ActiveX control.

1           71.    The generated data signals of claim 67 wherein the data structure  
2 contains an application that displays characteristics of the group of items in a display area.

1           72.    The generated data signals of claim 67 wherein the data structure further  
2 comprises, for each identified characteristic, information identifying an icon representing the  
3 characteristic,  
4 such that the contents of the data structure may be used to display an icon representing each  
5 identified characteristic.

1           73.    The generated data signals of claim 67 wherein the data structure further  
2 comprises information identifying an order for the identified characteristics that reflects the  
3 relative extents to which the identified characteristics distinguish typical items in the group  
4 of items from typical items outside the group of items,  
5 such that the contents of the data structure may be used to display indications of the  
6 identified characteristics in the identified order.

1           74.    The generated data signals of claim 73 wherein the identified order for  
2 the identified characteristics reflects the relative extents to which the identified  
3 characteristics distinguish typical items in the group of items from typical items outside the  
4 group of items.

1           75.    The generated data signals of claim 67 wherein the data structure further  
2 comprises information indicating the extent to which the items in the group of items possess  
3 each of the identified characteristics.

1           76.    The generated data signals of claim 67 wherein each item in the group is  
2 an actor, and wherein a selected one of the identified characteristics reflects a particular  
3 action that at least a portion of the actors in the group have performed with respect to an  
4 element in a selected set, and wherein the data structure further comprises, for each of a  
5 subset of the elements in the selected set with respect to which the largest numbers of the  
6 actors performed the selected action, a hyperlink to a document describing the element.

77. One or computer memories collectively containing a data structure  
1 indicating a characterization of a group of items, comprising information identifying one or  
2 more characteristics that distinguish typical items in the group of items from typical items  
3 outside the group of items,  
5 such that the contents of the data structure may be used to display characteristics of the group  
6 of items that characterize the group of items.

78. The computer memories of claim 77 wherein the data structure further  
1 comprises, for each identified characteristic, information identifying an icon representing the  
2 characteristic,  
4 such that the contents of the data structure may be used to display an icon representing each  
5 identified characteristic.

79. The computer memories of claim 77 wherein the data structure further  
1 comprises information identifying an order for the identified characteristics that reflects the  
2 relative extents to which the identified characteristics distinguish typical items in the group  
3 of items from typical items outside the group of items,  
5 such that the contents of the data structure may be used to display indications of the  
6 identified characteristics in the identified order.

80. The computer memories of claim 79 wherein the identified order for the  
1 identified characteristics reflects the relative extents to which the identified characteristics  
2 distinguish typical items in the group of items from typical items outside the group of items.